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CC:

Date: 1/16/2015 7:50:52 AM

Subject: RE: Blacktail Creek spill information-flows

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Hello,

I pulled up the USGS water flow data from Cow Creek which is just below Blacktail Creek, you can see a spike in the gauge height right around the time of the spill. I can't think of any other reason for this spike except for the spill. Perhaps we could use the Manning Formula or something similar to get a rough estimate of the volume of the spill.

[http://waterdata.usgs.gov/nwis/uv?cb\\_00060=on&cb\\_00065=on&format=gif\\_default&site\\_no=06331000&period=&begin\\_date=2014-12-01&end\\_date=2015-01-16](http://waterdata.usgs.gov/nwis/uv?cb_00060=on&cb_00065=on&format=gif_default&site_no=06331000&period=&begin_date=2014-12-01&end_date=2015-01-16)

-Jessica

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**From:** Rockeman, Karl H. [mailto:[krockema@nd.gov](mailto:krockema@nd.gov)]  
**Sent:** Tuesday, January 13, 2015 12:45 PM  
**To:** [Jessica N Johnson@fws.gov](mailto:jessica_n_johnson@fws.gov); Harlon, William D III NWO; Way, Steven; Luttschwager, Kent A.; Ryckman, Fred F.; Johnson, Sean M.  
**Subject:** Blacktail Creek spill information

Attached please find a listing of sampling data, including NDIC results, along with maps showing locations. I have also attached the spill report with most recent updates.

Please note that most of the data included is from field readings, and not laboratory samples, so should be considered provisional.

If you have any questions, please let me know.

Karl Rockeman, P.E.  
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